Atty Dkt No.: NFC1P004X1

58. (New) The method of Claim 53, wherein the act of filtering the optical beam to generate a second set of pass bands further comprises the act of:

- generating a second interference within the optical beam with a second free spectral range which differs from the first free spectral range by an amount substantially corresponding with plus and minus the quotient of the first free spectral range divided by one of the number of channels of the selected wavelength grid and a subset of the number of channels of the selected wavelength grid.

REMARKS

Applicant submits a copy of the new oath or declaration signed by the inventors with the application number and filing date.

Applicant preliminarily amends the specification as set forth above to conform the reference to drawings in the specification with the drawings as submitted.

Applicant also preliminarily amends the original claims as filed with the cancellation of Claims 1-32 and the addition of new claims 33-58. Support for the amended claims can be found throughout the Specification.

Entry of the proposed preliminary amendments is respectfully requested. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **"Version with marking to show changes made."** Favorable consideration is respectfully solicited.

Respectfully submitted,
CARY & KELLY, LLP

Date: March 12, 2001 Signed: _____

Charles C. Cary
Registration No. 36,764

CARY & KELLY, LLP
1875 Charleston Road
Mountain View, California 94043
Telephone: 650.533.4844
Fax: 650.316.4013

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In the Specification:

IN THE SPECIFICATION:

The paragraph beginning Page 9 line 18, has been amended as follows:

The grid generator 246 operates as a filter, e.g., an interference filter with a thickness Lg and index of refraction n_g chosen such that its loss spectrum comprises a multiplicity of minima within the communications band at wavelengths that coincide with the center wavelengths of the selected wavelength grid. More generally the grid generator filter function results in a plurality of passbands centered on each of the gridlines of the selected wavelength grid. (See [FIGS. 4A-B] FIG. 4 and 5A-C). The grid generator has a finesse that suppresses neighboring modes of the laser between each channel. In this embodiment of the invention the grid generator is an interference element, e.g., a parallel plate solid/gas etalon. The grid generator is precisely dimensioned to have a free spectral range (FSR_{Grid_Gen}) corresponding to the spacing between wavelengths/gridlines of a selected wavelength grid, e.g., an ITU grid (See [FIGS. 4A-B] FIG. 4 and 5A-C). In this embodiment of the invention the grid generator is fixed to the base 260.

The paragraph beginning Page 10 line 18, has been amended as follows:

In this embodiment the channel selector includes a gas or solid etalon 252. The etalon includes opposing planar first and second reflectors which are highly reflective, e.g., R>90%. The channel selector is dimensioned to have a free spectral range ($FSR_{Channel\_Selector}$) differing from that the grid generator (FSR_{Grid_Gen}) by an amount corresponding substantially inversely with the number of channels in the wavelength grid. Both free spectral ranges of the grid generator and channel selector are broader than the free spectral range of the cavity (FSR_{Cavity}) (See [FIG. 4A-B] FIG. 4 and FIGS. 5A-C). In an embodiment of the invention, the FSR of the channel selector differs from the FSR of the grid generator by an amount which

substantially corresponds to the quotient of the channel spacing and the number of channels in the wavelength grid, e.g., an ITU grid (See [FIG. 4A-B] FIG. 4 and FIGS. 5A-C). Vernier tuning of the channel selector results in a single loss-minimum within the communications band which can be tuned across the grid. The combined feedback to the gain medium from the grid generator together with the channel selector supports lasing at the center wavelength of the selected channel and substantially attenuates all other channels (See [FIG. 4A-B] FIG. 4 and FIGS. 5A-C).

The paragraph beginning Page 8 line 4, has been amended as follows:

FIGS. [2AB] 2A-B are isometric side and top views respectively of a tunable external cavity laser with a vernier tuned filter according to an embodiment of the current invention. The laser cavity is delimited by the partially reflecting rear facet 226 of the gain medium/laser amplifier 224 and by an external retroreflector 264. Tunable feedback to control the lasing wavelength is provided by the external cavity which is optically coupled to the anti-reflection (AR) side 228 of the gain medium. The effective reflectivity of the external cavity should be much greater than the residual reflectivity of the AR coated front facet so that the vernier tuned filter 290 can deliver sufficient feedback to put the laser in the "strong feedback" regime. The vernier tuned filter includes in this embodiment, grid generator 246 and the channel selector, e.g., interference filter/etalon 252. The external cavity laser also includes lens 242, channel tuner 254, grid control 248, base 260, output coupling optics 212, and fiber optic 206. The laser amplifier 224 in the embodiment shown is a laser diode.

In the Claims:

Claims 1-32 have been cancelled. New Claims 33-58 have been added.